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ABSTRACT

All teachers, coaches, and guidance counselors should be concerned about eating disorders as a health and life threatening illness. While no reliable research studies or statistics exist on the incidence of eating disorders among athletes and aerobic exercisers, estimates suggest that 10-20% of the female high school population and a much higher percentage of college and university female populations are involved in some form of eating disorder. Studies have shown that the incidence is much higher among children and young adults involved in activities such as dance, gymnastics, figure skating, middle distance and marathon running, swimming and diving, rowing and wrestling. Although eating disorders are generally perceived as a female adolescent problem, there are statistics that suggest that a growing number of males and young adults are also engaged in eating disorders. This document reviews the literature on eating disorders in the areas of: (1) eating disorders and sport/fitness activity; (2) sports/fitness programs and maladaptive behavior; (3) competitiveness in sport/fitness and eating disorders; and (4) sociocultural factors. Research is reviewed and books and publications on eating disorders are discussed. Over 80 references are included. (NB)

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The Role of Physical and Health Educators and Coaches
in the Prevention of Eating Disorders

by

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All teachers/coaches and guidance counsellors should be concerned about eating disorders as a health and life threatening illness. It is particularly relevant to the physical and health educator and coach, since eating disorders are often described as 'a diet and fitness/sport program gone wild.' Eating disordered individuals start a diet like anyone else, but for some unknown reason, the eating disordered individual is driven to further weight loss, even to the point of emaciation. Similarly, what starts out as a moderate healthy fitness or sport program ends up as fenized compulsive exercise which dominates the person's life. The diet and fitness/sport program which starts out as the solution to stress problems of life, in turn becomes the problem. 'Anorexia Athletica' (A. Thuker, 1987), 'Exercise Anorexia and Bulimia' (P.J.V. Beaumont, 1986) and 'Cosmetic Sport and Fitness Ranging from Starvation to Steroids' (Moriarty & Moriarty, 1989) are the legacy.

No reliable research studies or statistics exist on the incidence of eating disorders among athletes and aerobic exercisers exist. Estimates suggest that 10-20% of the female high school population and a much higher percentage of college and university female populations are involved in some form of eating disorder. Research studies have shown that the incidence is much higher among children and young adults

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involved in activities such as dance, gymnastics, figure skating, middle distance and marathon running, swimming and diving, rowing and wrestling. An increasing number of requests are being received by BANA-Can/Am for assistance from fitness management professionals from throughout North America suggesting that certain predisposed individuals in the fitness community are also at high risk.

Although eating disorders generally are perceived as a female adolescent problem, there are statistics that suggest that a growing number of males and young adults (males and females) in their twenties and thirties are also engaged in this maladaptive behaviour.

Eating Disorders and Sport/Fitness Activity

Studies have suggested that the incidence of eating disorders is much higher in children and young adults in physical activities such as dance (Garner, 1983; Anthony, Wood & Goldberg, 1982); figure skating (Perry, 1986); gymnastics (Costar, 1983; Rosen, 1986); middle distance and marathon runners (Katz, 1986; Yates, Leehey & Shisslak, 1983) and a variety of other activities such as swimming, diving, rowing, riding and wrestling (Black & Burckes-Miller, 1988; Burckes-Miller & Black, 1988 a & b; Leichner, 1985; Rosen, 1986).

Rosen, McKeeg, Hough and Curley (1986) have suggested that some athletes tend to resort to dangerous weight control techniques if they have perceived themselves as obese at some time of their lives or have lost more weight than they originally intended. They surveyed 182 female collegiate athletes and found that thirty-two percent practices at least one of the weight control behaviours identified as bulimia.

This population did not engage in this behaviour to enhance physical beauty but attempted to lower their body weight to achieve the highest possible performance (Rosen et al., 1986).

Muni-Brander and Lachenmeyer (1986) concluded that from a population of male high school athletes and non-athletes, 25% reported vomiting to control weight, 12% reported bingeing and vomiting, 2.7% abused laxatives, 1.3% abused diuretics and 9.5% used diet pills to achieve weight loss.

Burckes-Miller and Black (1986) conducted a study with 695 male and female college athletes and reported both bulimic attitudes and behaviours. Twenty-four percent of athletes reported to have recurrent binge eating episodes at least once every 1-8 days, 11.9% reported a loss or fear of losing control when eating and 5.3% ate until they were physically ill. Athletes also indicated that they were using severe weight control methods, 5.6% were engaged in self-induced vomiting, 3.7% abused laxatives, 11.9% fasted for at least twenty-four hours and 1.4% used enemas.

Katz (1986) suggests that extreme exercise such as long distance running can predispose individuals to eating disorders. He indicates that when weight loss is followed by excessive exercise, certain biological and social reinforcers become evident. This is also followed by a diminished appetite, increased narcissistic investment in the body, and an elevated production of endorphins which enhances mood. Katz (1986) reports that bulimic behaviour became apparent in relation with reduced running and dysphoria.

Burckes-Miller and Black (1988a) report that one-seventh of both male and female college athletes seem to have distorted body image and perceive themselves as fat even though they had lost weight and were not overweight. About one-third of the athletes were preoccupied with food and weight and about one-tenth did not feel in control when they ate. Approximately one-quarter of the male and female athletes engaged in bingeing behaviour and one-twentieth of athletes reported eating until they were physically ill and significantly more of them were women than men.

Sports/Fitness Programs and Maladaptive Behaviour

A number of studies at the University of Windsor Sport Institute for Research/Change Agent Research (SIR/CAR) conducted throughout the '70s and the '80s show that when children/youth sport programs are professionalized, commercialized and politicized, maladaptive behaviour among participants was a probable outcome. (Brown, Holman & Moriarty, 1984; Hyrcaiko, Moriarty & McCabe, 1978; Moriarty et al., 1982; Donovan & Moriarty, 1986; Moriarty, 1983; Moriarty, Guilmette & Zarebski, 1981; Moriarty, Guilmette & Leduc, 1978; Holman & Moriarty, 1989). Macintosh, Bedeck and Franks in their study of Sport and Politics in Canada: Federal Government Involvement Since 1961 (1987) arrive at the same conclusion. Most recently the Dubin Commission (1990) resulting from the positive steroid test of former gold medalist Ben Johnson at the 1988 Olympics, is another testimony to the extent of steroid abuse in amateur athletics. For the most part, these studies focus on males, since until recently systemic discrimination in North America has

made both amateur sport and professional athletics mainly a male domain. The women's movement and equity advancement over the last decade has lead to a number of studies showing overemphasis in women's sports, as is the case in men's sports, particularly leads to maladapted behaviour which invariable takes the form of eating disorders.

Mariah Burton-Nelson (1991) in Are We Winning Yet? How Women Are Changing Sports and Sports Are Changing Women makes some interesting points in her opening chapter on "Playing With the Boys: An Introduction" (1991: 3-10). She points out that there has been considerable change in women's sports which accompany the "sprint towards equal opportunity" (1991: 4), which was prompted by Title IX included in the Educational Amendment to the Civil Rights Act (1972) and the fitness movement of the '80s. Prior to the equity emphasis, women athletes used to practice and play in the privacy of the 'women's gym' engaging in a sport ethic characterized as 'socializing sport' which promoted skill, friendship, fair play, 'high moral conduct', and participation for all, as contrasted with men's athletic business which was characterized by an elitist 'win-at-all-costs' mentality, commercialization and centralization. Many female coaches and administrators of the 'old school' feared that the values they had been teaching for decades would be destroyed by the influx of money, prestige and cutthroat competition that accompanied men's programs.

What has been the outcome of this movement? On the positive side, women have had an opportunity to participate and develop physical competence and skill, to develop self-confidence and face the challenge

of being a role model. In North American high schools, approximately two million women play interschool sports, up from a third of a million in 1971. In college, approximately thirty-four percent of the athletes are female, and over a third of the U.S. and Canadian Olympic teams are females. TSN in Canada and ESPN in the U.S., the sports networks, cover women's sport as a matter of course and more women's sports are appearing on the major networks. In terms of print media, USA Today, Sports Illustrated and most daily papers devote between 15 and 20% of their sports pages to women.

Yet every gain includes a loss. As women's sports have become more popular and lucrative, men have claimed leadership roles, not only in coaching, but also in management. In 1982, the National Collegiate Athletic Association (NCAA) began offering televised women's championships leading to the demise of the Association for Intercollegiate Athletics for Women (AIAW), the body of female teachers, administrators and students which had made decisions about women's college sports.

The world of sports is still mainly paternalistic. The NCAA, which governs both men's and women's sports, is predominantly male and its Canadian counterpart, the CIAU (Canadian Interuniversity Athletic Union) is predominantly male. More than half of all the women's college teams in the United States are now coached by men, and there is a similar trend in Canada.

On the professional level, males act as executive directors for the Women's Tennis Association, Ladies Professional Golf Association and the Ladies Pro Bowlers Tour. The U.S. Olympic Committee has 105

members on its executive board - 91 are men, while in Canada of the 52 members on the Canadian Olympic Association, only 6 are women. Of the 38 national governing bodies of sports in the United States (such as the U.S. Figure Skating Association) 34 have male presidents. In Canada, of the 65 or so sports represented at the national centre, women represent only 13% of the head coaches, 29% of the senior executives and 23% of the high performance directors. In terms of salary, none of the women were represented in the highest category and the percentage went up as the remuneration went down. One quarter of the women, compared to less than 5% of the men had experienced overt discrimination (Hatch, 1991: 8).

Information about women's athletics is filtered through male writers, photographers, broadcasters and publishers: approximately 9,650 of the nation's 10,000 print and broadcast sports journalists in the U.S. are men and statistics are even more grim in Canada. As Mariah Burton-Nelson points out, "now women play in the 'men's gym', under male rules, male officiating, male coaching, and too often, male harassment" (1991: 5). In general, women involved in athletics and physical activity find themselves in a hostile, paternalistic 'manstream' sport world.

Competitiveness in Sport/Fitness and Eating Disorders

Garner (1984) reported studies assessing the relevance of competitiveness in terms of eating disorders. He reported the results of a study comparing dance students and music students from high expectation settings. The EAT (Eating Attitude Test) was administered and showed a percentage deviation from average body weight of -17.9 for dance students and

only -6.3 for music students (Garner, 1983). In a further analysis looking at the prevalence of anorexia nervosa and symptoms of anorexia nervosa, the total dance group was further subdivided and it was found that those in the more competitive setting were -19.8% deviant from average body weight, while those in a less competitive setting were -8.6 from normal body weight. The message here is that the degree of competitiveness bears a direct relationship with the degree of severity of eating disorders, and further that women involved in activities such as dance (and it might be added, gymnastics, figure skating, aerobic dance and fitness programs) which carry with them an expectation of slimness and also place physical demands upon the participants, place the individual much more at risk than competitive settings such as university and music students encounter (-3.7 deviation from average body weight) or even modeling students (-11.9%).

Another study worthy of note is that of Anthony, Wood and Goldberg (1982) of 245 college females involved in areas of study emphasizing exercise (physical and health education) or body image (dance and drama). Utilizing an Eating Attitude Test (EAT), the researchers found significantly higher scores among dance and drama students than among those majoring in physical and health education (or English). Their findings provide further indication that those at risk to eating disorders gravitate towards activities of endeavour that emphasize body image, rather than towards areas merely emphasizing physical exercise.

Finally, an interesting study by Jorgun Sundgot-Borgen on "Pathogenic Weight Control and Eating Disorders Among Female Athletes," presented

at the University of Windsor in the Fall of 1990, demonstrates that sports can be a factor either precipitating or preventing an eating disorder - depending upon the nature of the sport. This study of 521 athletes and 447 controls utilized the Eating Disorder Inventory (EDI) and a demographic questionnaire to investigate the incidence of eating disorders, not only among athletes and controls, but also with the athletic group subdivided depending on the nature of the sport. Six categories were utilized for sports groups: 1) technical, including things such as long and high jumps, sailing and golf; 2) endurance, such as middle and long distance running, rowing, swimming, and speed skating; 3) aesthetics, such as dance, gymnastics, figure skating and diving; 4) weight dependent, such as wrestling, judo and karate; 5) ball games, such as basketball, volleyball, tennis and badminton and 6) power, such as powerlifting, shot put and discus.

Results showed that 32% of the athletes and 20% of the controls were dieting, and further that 34% of the dieting athletes and 25% of the dieting controls used pathogenic weight control methods. Twenty-five percent of the controls and 23% of the athletes were classified as risk subjects for developing an eating disorders. The highest frequency of athletes using pathogenic weight control methods and athletes defined as risk subjects were found in the endurance, aesthetic and weight dependent sports. A significantly higher number of athletes compared to controls used pathogenic weight control methods. Athletes competing in the aesthetic, weight dependent and endurance sports showed the highest number of athletes revealing significant symptoms of eating disorders.

In many sports (gymnastics, figure skating, distance running and cross country skiing) low weights are considered necessary for optimal appearance and performance (Brownell, Nelson, Steen and Wilmore, 1987). There is a strong negative correlation between percent body fat and performance in the sport where this has been studied (Wilmer & Costa, 1987). Some sports even impose specific weight limits for competition (wrestling, rowing and horse racing). In other sports such as gymnastics, dance, figure skating and diving, aesthetic appeal is considered important.

Results presented in Table 1 (percentages from 168 subjects who scored above known anorexics on the eight subscales of the Eating Disorder Inventory) show little difference in scores between the non-athletes (N=101) and the total athletes (N=67); however, when the athletes are divided into athletes in activities with an emphasis on leanness (N=35), athletes in activities with no emphasis on leanness (N=32) there is a significant difference. For example, athletes in activities with emphasis on leanness exceed non-athletes in six of the eight subscales (drive for thinness, bulimia, perfectionism, interpersonal distrust, interoceptive awareness and maturity fears). On the other hand, athletes and activities with no emphasis on leanness had lower scores on seven of the eight subscales (drive for thinness, bulimia, body dissatisfaction, ineffectiveness, perfectionism, interoceptive awareness and maturity fears). When the total number of subscale scores for athletes who scored above the mean value for known anorexics were compared, the athletes in activities that emphasized leanness

Table 1 Percentages of 168 Subjects Who Scored Above Known Anorexics on the Eight Subscales of the Eating Disorders Inventory

Group	Attitude/Behavior Subscales				Psychological Trait Subscales			
	Drive for Thinness	Bulimia	Body Dissatis- faction	Ineffec- tiveness	Perfec- tionism	Inter- personal Distrust	Intero- ceptive Awareness	Maturity Fears
Nonathletes (n = 101)	19	22	45	3	31	5	5	6
Athletes in activities with emphasis on leanness (n = 35)	23	31	43	3	37	17	6	11
Athletes in activities with no emphasis on leanness (n = 32)	16	19	19	0	22	9	0	0
Total athletes (n = 67)	19	25	31	1	30	13	3	6
All subjects (N = 168)	19	23	39	2	30	8	4	6

had more high scores (21%) than those not emphasizing leanness (11%) (Borgen, 1987). When asked why they were dieting, athletes indicated it was to enhance performance (67%), or they were told by their coaches (38%), parents (27%) or doctors (5%), or to improve attractiveness (14%). Controls, on the other hand, dieted mainly to improve attractiveness (95%), with only 6% interested in enhancing performance. Certainly coaches involved in sports which are aesthetic in nature, weight dependent and/or involve endurance should be particularly vigilant in guarding against eating disorders.

The message seems to be clear here for coaches, fitness leaders and instructors: namely, physical activity in and of itself does not precipitate eating disorders; however, if programs are presented with an emphasis on elitism, winning and body image, and use weight loss to enhance performance, they may very well serve as a precipitating or perpetuating activity for the eating disordered individual.

Socio-Cultural Influences

Eating disorders are a multidimensional illness with physiological, psychological, social and cultural roots. David Garner, at the University of Windsor BANA-Iona College Conference (1984) listed five socio-cultural influences which are associated with the increase in the prevalence of eating disorders:

1. Pressure to be thin - "No one can be too rich to too thin."
2. Glorification of youth - "Not how good you look, but how long you look good."

3. The changing role of females "having it all and doing it all in a Size 3 dress."
4. Media image and marketing of the super woman - "Virginia Slims and all that jazz."
5. The sport and fitness craze - "the tyranny of elitism."

Pressure to Be Thin

Hara Estroff Marano (1991), in her book, Style Is Not a Size: Looking and Feeling Great in the Body You Have, has a chapter on "Thin Wasn't Always In (And How It Got To Be That Way)" (1991: 39-56). Marano points out that down through the centuries, in general, the ample mature female figure has been in vogue. The Greeks set the standard for Western culture and established the tradition of the human form as the centre of the subject of art. The Greek ideal was of "comfortable form and substantial mass." (Marano, 1991: 40). With the Christian era came a fashion for asceticism, with the female figure flat and formless with the centre of focus on the abdomen, so that the curve of the hip gave way to the curve of the stomach. The Gothic body ideal which followed carried all of its weight in the belly and for all of its asceticism is a figure of fecundity. The maternal figure predominated.

The Renaissance featured the reproductive female figure. Reubens returned to the Greek ideal, but expanded it with "a large arch of a hip, the shining expanse of the stomach, and visible, unabashed joy in abundance." (Ibid: 42). In 'Venus and Adonis', Reubens's joy

in an abundant love goddess reflects the Renaissance faith in the natural order. This heritage was passed almost directly on to the nineteenth century French impressionists. Renoir's 'Nude Bathers in the Sun' are resplendent in their folds of flesh, harking back to the classical ideals, not only in proportions of beauty, but in the underlying belief that the physical life is capable of its own nobility. (Ibid: 44).

On the other hand, the British culture of the eighteenth century brought in the Romantic Era with a new asceticism in which pallor and thinness supplanted sexual vigour and fleshiness. Gauntness now acquired a new cultural meaning - it bore the suggestion of exhaustion through ecstasy or anxiety. The Victorian era had the corset to help reign in any corpulence and the Edwardian figure featured the hobble skirt elaborately trussed. In the twentieth century, as sport and physical activity became possible and even fashionable, corsets capitulated completely to diets. (Marano, 1991: 46).

Betty Grable in the forties, Elizabeth Taylor in the fifties and Marilyn Monroe in the sixties reinforced the classical ideal of the full-figured female. In 1966, however, Twiggy arrived from England, and from that time on the pseudo-romantic ideal of the slight, frail, gaunt female prevailed as the fashionable ideal. Naomi Wolf, in her excellent book, The Beauty Myth: How Images of Beauty Are Used Against Women, has an excellent chapter on hunger, in which she points out that after Twiggy models were twenty-three percent below the population average, whereas previously they had been only eight percent (1991: 185).

Garner and Garfinkel (1983) note a similar trend in Miss America contestants and Playboy centrefolds. Wolf contends that it is not thinness but hunger that is prized, with thinness merely symptomatic. Wolf's basic thesis is summed up in the paragraph below:

Now, if female fat is sexuality and reproductive power; if food is honour; diet is semi-starvation; if women have to lose twenty-three percent of their body fat to fit the Iron Maiden and chronic psychological disruption sets in at a body weight less than twenty-five percent; if semi-starvation is physically and psychologically debilitating, female strength, sexuality and self-respect pose the threat explored earlier against the best interests of society; if women's journalism is sponsored by a thirty-billion dollar industry whose capital is made out of the political fear of women; then we can understand why the Iron Maiden is so thin. The 'thin ideal' is not beautiful aesthetically; she is beautiful as a political solution.

(Wolf, 1991: 196).

Among other significant points which she makes are:

1. One million women per year in North America develop eating disorders.
2. Two hundred thousand women die from eating disorders per year, or eighteen thousand per month, which she points out is more than died from AIDS from the time of its inception to the end of 1988, according to World Health Organization (WHO) statistics on 177 countries.
3. Not only in industrialized, wealth nations, but also in the poor, when famine comes - women are the first in line with a diet that is less and worse.
4. The current diets which are in vogue provide less nutritional sustenance than that available to Londoners during the blitz,

Paris during the siege, Holland during the occupation or indeed concentration camp victims.

5. Seventy-five percent of women aged eighteen to thirty-five believed they were fat, while only twenty-five percent were medically overweight; and indeed forty-five percent of the underweight women thought they were too fat.
6. National Institute of Health studies linking obesity to heart disease and stroke were based on male subjects, and when a study of females was finally published in 1990, it showed that weight made only a fraction of difference for women than it made for men. Further, the results of a recent study have suggested that women may in fact live longer and be generally healthier if they weighed ten to fifteen percent above the life insurance standards and they refrained from dieting.
7. Eating disorders has one of the highest fatality rates for any mental illness. Brumberg records five to fifteen percent of hospitalized anorexics and L.K.G. Hsu gives a death rate of up to nineteen percent.
8. Vivian Meehan, President of the National Association of Anorexia Nervosa and Associated Disorders, reports that a survey of 494 middle class school girls in California shows that half describe themselves as overweight, while only fifteen percent were so by medical standards; thirty-one percent of the nine year olds thought they were too fat; eighty-one percent of the ten year olds were dieting.

In summary, the paternalistic power structure which controls, power, prestige and privilege has led to the great "weight shift" which prompts women to turn to the "one stone solution." If she could just lose one stone (one stone equals fourteen pounds) she would be accepted.

The Edible Woman (Margaret Atwood, 1989) prompted by the Body/Politics (Mary Jacobus et al., 1990) associates The Hungry Self: Women Eating and Identity (Kim Chernin, 1986) and goes on a Hunger Strike (Susie Orbach, 1986), since Fat Is a Feminist Issue (Susie Orbach, 1979) and believes she is Never Too Thin (Eva Szekeley, 1988). The Obsession: Reflections on the Tyranny of Slenderness (Kim Chernin, 1981) helps explain why women are Never Too Thin: Why Women Are At War With Their Bodies (Roberta Pollick Seid, 1989).

Holy Anorexia (Rudolph Bell, 1988) Seen Through Clothes (Ann Holland, 1988) Is It Any Wonder That We Have Eating Disorders (L.K. George Hsu, 1990) and Fasting Girls: The Emergence of Anorexia Nervosa as a Modern Disease (Joan Jacobs Brumberg, 1988).

Predisposing, Precipitating, Perpetuating
Professional Help and Prevention

Eating disorders have been described as a multidimensional physiological, psychological and social cultural illness. In this presentation, these four variables are analyzed in terms of the five 'P's listed below:

Predisposing - who is susceptible to succumb to eating disorders.

Precipitating - what incident in a child or young adult's sport or exercise life might trigger a bout with eating disorders.

Perpetuating - how does the addictive nature of eating disorders manifest itself in terms of the development of sport or exercise dependence.

Professional Help - who should be included in the professional team involved in in-hospital or outpatient treatment, self-help and support groups.

Prevention - what resources are available in terms of primary and secondary education in terms of intervention techniques and coping strategies.

Who, Why, When, What and How

Type A personalities, perfectionists and success-oriented people may be predisposed to succumb to eating disorders. These people are usually tops in school, sports and social life - overachievers in a paternalistic, elitist system. School and sports organizations are often programmed to burn out our best young people - the givers and the doers. The film, "The Best Little Girl in the World," (1987) conveyed this message.

In terms of precipitation, initiation of a diet or a sport or fitness program has often been identified with the development of an eating disorder. Certainly any change in the person, such as occurs at adolescence, or in their situation, such as moving from one level of education to another or one level of competition to another, may trigger a bout of eating disorders. Teachers and coaches should be cautious in their comments and sensitive to changes in the lives of

their students and athletes. Any real or perceived loss, death of a parent or grandparent, divorce in the family, sexual demands, an accident, loss of a boyfriend or any significant other could lead to an eating disorder. Certainly teachers, coaches and other health professionals should avoid counseling for dieting. A recent NCAA (1991) film features a girls who started her eating disorder as a result of a humiliating experience with a coach. The coach awarded two T-shirts per week - one for the 'lean machine' and the other for the 'porker of the week.' Regrettably, insensitivity and indeed discrimination against not only overweight athletes, but also normal weight or underweight athletes, is one of the few socially sanctioned prejudices allowed in the paternalistic sport world.

In terms of perpetuation, eating disorders appear to be addictive in nature. Dr. Marianne Marazzi (1986), of Wayne State University, has both animal and human research which suggests that that autoimmune system does release endorphins which lead to a 'high' when some individuals start on a diet or engage in excessive exercise. As people become physiologically and psychologically addicted, the exercise and diet which started out as the solution to the problem becomes the problem. The individual becomes a caricature of herself with dieting and excessive exercise obsessing her life to the exclusion of other stress management techniques. Such individuals confuse concern with criticism, since it is difficult to reason with a starving person. Anorexics deny they have a problem; bulimics admit it but maintain they will take of it on their own. 'Tough love' usually is required to get the athlete or student into treatment.

Professional help requires accurate diagnosis and appropriate treatment. A team approach is advocated, with some combination of MDs, clinical nurse, nutritionist or dietitian, social worker working in cooperation with a psychiatrist or psychologist. A variety of treatment is available: i.e. in hospital, day hospital and outpatient - in a variety of programs, including behaviour modification, cognitive therapy, educational therapy, psychotherapy, pharmacological (drug) therapy and/or family therapy. Frequently, these treatment modalities are augmented with self-help and support group activity.

Eating disordered individuals and their significant others (teachers, coaches, parents and loved ones) should appreciate the fact that 'it is a long, bumpy road to recovery.' However, 'there is life after eating disorders.' Seventy percent of those with eating disorders recover, forty percent fully and thirty percent substantially. Another ten to twenty percent survive, albeit with lifelong serious health problems.

The role of the physical and health educator, coach and family members is to support the therapists, continue on with their own personal and professional life and avoid dysfunctional guilt trips. Parents, teachers or coaches do not cause, cannot control and cannot cure eating disorders. They can contribute either negatively by being an enabler, or positively by exercising 'tough love' by getting the eating disordered individual into treatment and supporting them throughout their recovery.

In terms of prevention, physical and health educators and coaches have a great role to play. A curriculum should prepare young women

and men to appreciate the difference in their role and their physiological makeup.

From a physiological point of view, young girls and boys should be sensitized to realize that genetically males and females are different. Weight that is natural and healthy in their growth and development will vary. Dieting while growing leads to stunting of growth, malnutrition and adverse effects on hair, nails, teeth, bones, skin and ultimately to osteoporosis and in extreme cases, death. The set point theory of weight and acceptance of a variety in body size and shape should be inculcated at a very young age. Rather than having everyone fit into one predetermined model figure, students should be encouraged to accept themselves as they are and to get on with their lives. While efforts are made to shape bodies, the mind and spirit are also being molded.

The role of the health professional is to discourage dieting and to point out that when you diet your system shuts down. Students and athletes should be taught and shown that the best way to manage weight is by participating in three meals and two snacks drawn from the four food groups described in the Canadian and American food guides.

From a psychological point of view, the compulsive perfectionist tendencies should be discouraged. Such students should be encouraged to "take it easy on themselves." Drive for thinness, bulimic tendency, body distortion and dissatisfaction, feelings of ineffectiveness, perfectionism, interpersonal distrust and maturity fears should be ameliorated. Youth should be taught how to give and accept compliments

and made to realize that a thing is worth doing, even if done poorly. Teachers and significant others should not encourage overachievement, but rather advocate a well rounded life developing mind, body and spirit.

Emphasize that 'it's what's inside that counts' and encourage moderation in school, sports, spiritual and social life. Avoid counseling for excellence, appearance and achievement, and encourage young people to take it easy on themselves so that they do not burn themselves out in the teens or twenties.

Parents, teachers/coaches, fitness instructors and health educators do not cause, cannot control, and cannot cure eating disorders. But they can contribute either negatively by allowing this life threatening maladaptive behaviour or positively by detecting and referring eating disordered individuals to qualified health professionals. In addition, the primary role of the teacher/coach, physical and health educator, fitness instructor is provide primary and secondary preventive education by discouraging dieting to lose weight.

High achievers (children of action) who are success oriented and not generally self-destructive are the most likely to succumb to psychosomatic illnesses such as eating disorders when they pursue elitist goals. Professions and organizations structured to demand effectiveness and efficiency in service are programmed to burn out their best people. Not only children and youth, but also teachers, coaches and administrators, who have high strain from elitist expectations

placed on themselves and stress from public pressure in a fitness and sport oriented society are likely victims of substance abuse and burnout.

Teachers of physical and health education, in addition to teaching knowledge and attitude can also teach stress management behaviour. Subjects like physical and health education, as well as art, dance, cooperative games, music and drama, are fraught with potential as stress management alternatives to substance abuse (alcohol, drugs or food). Physical and Health Education teachers and coaches have an indispensable role to play in primary prevention of eating disorders (before they occur), and also secondary prevention (cutting down the chronicity of this illness by early identification and referral).

It is generally acknowledged in sport and fitness circles that to date compulsive exercise and involvement in elite or overly competitive athletic programs has been part of the problem; however, we can be part of the solution. Coaches and fitness instructors are presented with a tough challenge:

1. Study the signs, symptoms and characteristics of eating disorders and steroid use.
2. Develop the ability to identify and refer individuals with eating disorders or drug problems for professional assistance.
3. Market and implement fitness and sport for weight management rather than weight reduction, addressing the fact that being underweight is at least equally hazardous to your health as being overweight. Coaches would also counsel their athletes

to moderation in a well-rounded mix of school, sports, and social life and structure programs to avoid the excess of starvation and steroid use.

4. Incorporate sport, fitness and related activities (dance, music, cooperative games and relaxation) as alternate stress management techniques to avoid addiction to either eating disorders, alcohol or drugs.
5. Become significant advocates of the shift from elitist image of fitness/sport which contributes to unrealistic goals and false image to mass participation and a happy and healthy moderate activity program.
6. Challenge yourself to live and present yourself as a healthy, happy role model leading a balanced life and caring for yourself as well as others.

Researchers in the sport and athletic area have turned out a number of excellent publications which may be of interest to fitness participants, instructors and administrators. The National Collegiate Athletic Association (NCAA) has turned out a pamphlet on "Nutrition and Eating Disorders in College Athletes" (1991) and has also developed three audiovisual aids on nutrition and eating disorders: "Afraid to Eat: Eating Disorders in Student Athletes"; "Out of Bounds: Nutrition and Weight"; and "Eating Disorders: What Can We Do?" The Sports Medicine Council of Canada has also developed "Desperate Measures: Eating Disorders in Athletes" as an audiovisual aid. The Association

for the Advancement of health Education of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) has produced a Handbook for Coaches on Eating Disorders in Athletics, which was edited by Susan Chappell Holliman and published by Kendall-Hunt (1991). AAHPERD has also produced Eating Disorders Among Athletes: Theory, Issues and Research, which was edited by David R. Black (1991).

Sport coaches, instructors and administrators should work against the following Manstream sport cultural influences:

1. The 'Thinning edge' for judges and coaches
2. Obsolescent adolescent athletes
3. Harassed 'Golden Girls' in a paternalistic sport world
4. Sports Illustrated and Vogue fitness marketing
5. Anorexia Athletica and Bulimic Cosmetic Fitness

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